REMARKS

This amendment is presented in the revised format permitted in the notice entitled "Amendment in a Revised Format Now Permitted," which was published on the USPTO's website on January 31, 2003.

The application contains claims 8-11, 13 and 14.

In the final Office action, the examiner indicated that claims 10 and 11 would be allowable if rewritten in independent form. By this amendment, claims 10 and 11 have been amended to include all of the limitations of base claim 8. Accordingly, claims 10 and 11 are now in allowable condition.

Reconsideration of the rejections of claims 8 and 9 under 35 USC 102 as anticipated by Kobayashi et al (US 4,589,299) and claims 8, 9, 13 and 14 under 35 USC 102 as anticipated by Thrasher, Jr. et al (US 4,885,948) is respectfully requested.

Claim 8, as previously presented, clearly stated that "the worm (30) is produced, at the end of the armature assembly (10), by reshaping the armature shaft (12)." Nevertheless, the examiner maintains that claim 8 does not require "that the worm must be formed after the mounting of the armature assembly." Applicant submits that the language "at the end of the armature assembly" does require that the worm must be formed after the mounting of the armature assembly on the armature shaft.

During the examination process, the claims of an application must be given their broadest reasonable interpretation consistent with the specification. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550 (CCPA 1969). Applicant's specification teaches that

> In the method according to the invention having the characteristics of claim 1, first the armature is assembled from its individual parts; that is, the armature lamination packet, commutator and sliding and/or roller

> bearings are for instance placed in the armature shaft, and next the worm is produced by reshaping of the armature shaft. In this way, it is possible to produce the worm with a larger diameter than the remaining armature shaft, since the individual parts of the armature do not have to be placed on the armature shaft past the worm.

Specification, page 2, line 8-17. Also, original claim 1, which is a part of the original disclosure of the application states that

> 1. A method for mounting a worm on an armature shaft of an armature of an electric motor, characterized in that the worm (30) is produced, at the end of the assembly of the armature (10) from its individual parts (12, 14, 18, 20, 26), by reshaping for the armature shaft (12).

In view of the above, there should be no debate that the language "the worm (30) is produced, at the end of the armature assembly (10), by reshaping the armature shaft (12)" requires that the individual parts of the armature be assembled on the armature shaft before the worm is produced. Accordingly, the examiner's position that claim 8, as previously presented, does not require that the worm must be formed after the mounting of the armature assembly is unreasonable.

Nevertheless, the applicant has amended claim 8 to recite that "the worm (30) is produced by reshaping the armature shaft (12) after the armature assembly is mounted on the armature shaft" so as to leave no doubt that the individual parts of the armature must be assembled on the armature shaft before the worm is produced.

Kobayashi et al describes an armature shaft onto which, by means of rolling, two worms are formed, one with counterclockwise threads and the other with clockwise threads. The outer diameter of these worms is the same as or less than the diameter of the remainder of the armature shaft 16. It is, therefore, possible for all the components parts of the armature shaft, for example, the bearing 31, commutator 15, and armature packet 14, to be thrust onto the armature shaft 16 over the worm after the

rolling operation. In Kobayashi et al, there is no teaching or suggestion that the worm is formed after all the armature component parts are assembled on the armature shaft as required by claim 8. On the contrary, the larger diameter of the armature shaft is an indication of the order of assembly, which is conventional in the prior art, that is, first, the worm is produced by shaping and, then, the individual parts of the armature are mounted to the shaft. One of ordinary skill in the art would not have been taught by Kobayashi et al to first mount the individual component parts of the armature on the armature shaft and then, only after completion of the assembly, forming the worm by reshaping.

Thrasher also shows an electric motor with an armature shaft 18, onto which a worm is formed by means of rolling. The outer diameter of the worm 20 is greater than the diameter of the armature shaft. The shaft is supported in the housing by means of bearings 24 and 26. Disposed between the armature packet 16 and the worm 20 is a damper 28, which is intended to damp vibration of the armature during operation. The inside diameter of the damper is greater than the outside diameter of the worm 20. Thrasher teaches, beginning at col. 2, line 67, that "[t]he inner diameter 36 of the collar 30 is large enough so that the damper 28 can slide over the worm 20, which may be formed by rolling and therefore have a diameter greater than that of the armature shaft 18." Also, Thrasher teaches, beginning at col. 3, line 14, that "[t]he fingers 32 are of a spring-like nature that allows the armature shaft 18, including worm 20, to be installed into the gear housing 14 through the damper 28." That is, the damper 28 is thrust over the armature shaft expressly after the forming of the worm on the shaft. Thus, Thrasher specifically teaches away from the limitation found in applicant's claim 8 requiring that

the worm be formed on the shaft after the bearings and other armature components have been put in place on the shaft.

Claims 13 and 14 are directed to an armature having a tubular bearing seat (26, Fig. 1) or a shaft bearing (28, Fig. 2) mounted on the armature shaft between a worm and the other parts of the armature that are placed on the armature shaft. The examiner has made a finding of fact that "[t]he bearing seat of Thrasher is mounted on the shaft between the worm and the armature core because the spring fingers maintain sliding contact with the shaft because the inner diameter of the fingers is less that the shaft" (final rejection, page 3). This finding of fact by the examiner is clearly erroneous. What the examiner describes as a "bearing 28" (final rejection, page 2) is, in fact, described in Thrasher as a damper. In Thrasher, the actual shaft bearings 24 and 26 are shown to be mounted at the opposite ends of the shaft. See Fig. 1 and col. 2, lines 47-50. Further, Thrasher explicitly teaches that the damper 28 is press fitted into the gear housing 14 "sufficiently tight that the damper will be lodged in place and stay put." See col. 2, lines 64-66. Thrasher's "bearing" 28 is mounted on the gear housing, not on the armature shaft.

To support a rejection of a claim under 35 U.S.C. § 102(b), it must be shown that each element of the claim is found, either expressly described or under principles of inherency, in a single prior art reference. See Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984). Thrasher does not describe an armature having a tubular bearing seat or a shaft bearing mounted on the armature shaft between a worm and the other parts of the armature that are placed on the armature shaft. Thus, Thrasher does not anticipate

claims 13 and 14. In accordance with the foregoing, applicant respectfully requests that the examiner reconsider and withdraw the outstanding rejections. If, however, the examiner feels that any further issues remain or require clarification, the examiner is cordially invited to contact the undersigned in order that any such issues may be promptly resolved.

Respectfully submitted,

Date: March 7, 2003

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